

REMARKS

Reconsideration of the present application is respectfully requested. No claims have been amended, cancelled or added in this response. No new matter has been added.

Claim Rejections - §103(a)

Claims 1-3, 5-6, 8-14 and 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication 2002/0056126 of Srikantan et al. (hereinafter "Srikantan").

An object of Applicants' invention is to reduce bursts in streaming media data traffic, in order to reduce congestion of downstream routers, servers, etc., particularly when a large number of clients have requested the same media data stream at substantially the same time. Such congestion can result in degradation in the quality and smoothness of the data streams that are ultimately delivered to the clients.

In contrast, Srikantan's main purpose is to more economically manage resource consumption (e.g., CPU, memory, etc.) on the streaming server in relation to per-track metadata. Srikantan does not address the problem of reducing burst traffic or of reducing congestion in downstream network nodes generally.

In particular embodiments of the present invention, congestion in downstream nodes is reduced by reducing streaming media burst traffic, and more specifically, by adding to each packet's specified delivery time a delay value that has been pseudo-randomly selected for each client. This technique virtually ensures that even if a large number of clients (e.g., 10,000 or more) request the same data stream at the same

time, there will not be a large number of clients assigned the exact same delivery time for a given data packet. This technique, therefore, has the effect of spreading the delivery times of a given data packet for multiple clients substantially evenly throughout a given time window, thereby reducing burst traffic. With the above remarks in mind, attention is directed to independent claim 1.

Claim 1 recites:

1. A method for reducing magnitudes of output traffic bursts in a streaming media cache, comprising:
 - receiving a request from a first client system for a stream of media data, the stream of media data including a first streaming media data packet and a second streaming media data packet;
 - receiving a request from a second client system for the stream of media data;
 - receiving the first streaming media data packet from an upstream server, the first streaming media data packet including a delivery time;
 - pseudo-randomly selecting a first delay value and adding the first delay value to the delivery time of the first streaming media data packet to form a first modified delivery time for the first streaming media data packet;**
 - pseudo-randomly selecting a second delay value and adding the second delay value to the delivery time of the first streaming media data packet to form a second modified delivery time for the first streaming media data packet;**
 - modifying the first streaming media data packet with the first modified delivery time to form a first modified first streaming media data packet;**
 - modifying the first streaming media data packet with the second modified delivery time to form a second modified first streaming media data packet;**
 - outputting the first modified first streaming media data packet to the first client system at the first modified delivery time; and
 - outputting the second modified first streaming media data packet to the second client system at the second modified delivery time.(Emphasis added).

In contrast, Srikantan does not teach or suggest the above emphasized limitations. The Examiner acknowledges that Srikantan does not explicitly disclose modifying a media data packet's delivery time for first and second client respectively

(Final Office Action mailed on 11/17/2006, page 3). The Examiner, however, alleges that Srikantan discloses media frames of a live or pre-recorded event from a single source being simultaneously streamed in a real-time to multiple users in a specified order within a certain period of time. The Examiner further alleges that time delay techniques are utilized in order to deliver the packets of a single live or pre-recorded transmission to multiple clients as described by Srikantan. In order to support the above allegation, the Examiner cites Srikantan's paragraphs 25, 26, 55 and 56, and alleges that "different time indices" disclosed in Srikantan reads on the first and second delay values recited in claim 1. The Examiner then concludes that it would have been obvious to one with ordinary skill in the art to understand that the method disclosed in Srikantan involves modifying the media data packet's delivery time belonging to single media source in order to accommodate simultaneous real-time transmission to multiple clients. Applicants respectfully disagree.

As disclosed in Srikantan, a "time index" (or "time indices") is completely different from a delay value such as recited in claim 1. A time index is used for determining where a segment is located in a track or media file (see paragraph 3 and claim 17 of Srikantan). In other words, time index identifies and locates a media segment's time position in a track or media program (see Abstract). Thus, metadata regarding time indices is used to make sure a media track or file is streamed in the correct sequence with appropriate timing (see paragraph 3).

In addition, "delivery of each frame or other unit of the media must be performed in a specified order and within a certain period of time" (alleged by the Examiner and disclosed in Srikantan's paragraph 26) does not require time delay techniques to be

used. A media segment with a specified time index within a track or media file is supposed to be delivered at the specified time index, not because it is delayed to be delivered at the specified time index.

Srikantan's paragraph 55 states that "the same media may be streamed to each client, but with different timing." However, paragraph 55 further explains that the above quoted language means that "different client streams may, at any given time, be streaming media from different time indices within the media track." In other words, the above quoted language means that different clients are streaming different segments of the media track (because different time indices identify different segments), not that a first and second delay values are used to modify the delivery time of a same data packet to different clients. A person with ordinary skill in the art cannot reasonably conclude that the method disclosed in Srikantan involves or even suggests modifying the media data packet's delivery time to deliver the data packet to multiple clients.

For at least these reasons, therefore, claim 1 and all claims which depend on it are patentable over Srikantan.

Independent claims 9 and 16 include limitations similar to those discussed above for claim 1. Therefore, claims 9, 16 and all claims which depend on them are also patentable over Srikantan.

Conclusion


For the foregoing reasons, the present application is believed to be in condition for allowance, and such action is earnestly requested.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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